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IDENTIFICATION OF
COASTAL VEGETATION SPECIES IN
ERTS-1 IMAGERY

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ABSTRACT

Coastal vegetation species appearing in the ERTS-1 images taken of Delaware Bay on August 16, and October 10, 1972 (Observation ID. Nos. 1024-15073 and 1079-15133) have been correlated with ground truth vegetation maps, and imagery obtained from high altitude RB-57 and U-2 overflights. The vegetation maps of the entire Delaware Coast were prepared during the month of August and September, including the day of the August satellite overpass, using data collected on foot, in small boats, and from low altitude aircraft. Multispectral analysis of high altitude RB-57 and U-2 photographs indicated that five vegetation communities could be clearly discriminated from 60,000 feet altitude including, 1) salt marsh cord grass (Spartina alterniflora), 2) salt marsh hay and spike grass (Spartina patens and Distichlis spicata), 3) reed grass (Phragmites communis), 4) high tide bush and sea myrtle (Iva species and Baccharis halimifolia), and 5) a group of fresh water fowl. All of these species are shown in fifteen overlay maps, covering all of Delaware's wetlands prepared to match the USGS topographic map size of 1:24,000.

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GEOLOGICAL AND OCEANOGRAPHIC ERTS-1
IMAGERY TO DELAWARE'S COASTAL RESOURCES
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AND OCEANOGRAPHIC ERTS-1 IMAGERY
TO DELAWARE'S COASTAL RESOURCES
PLANNING

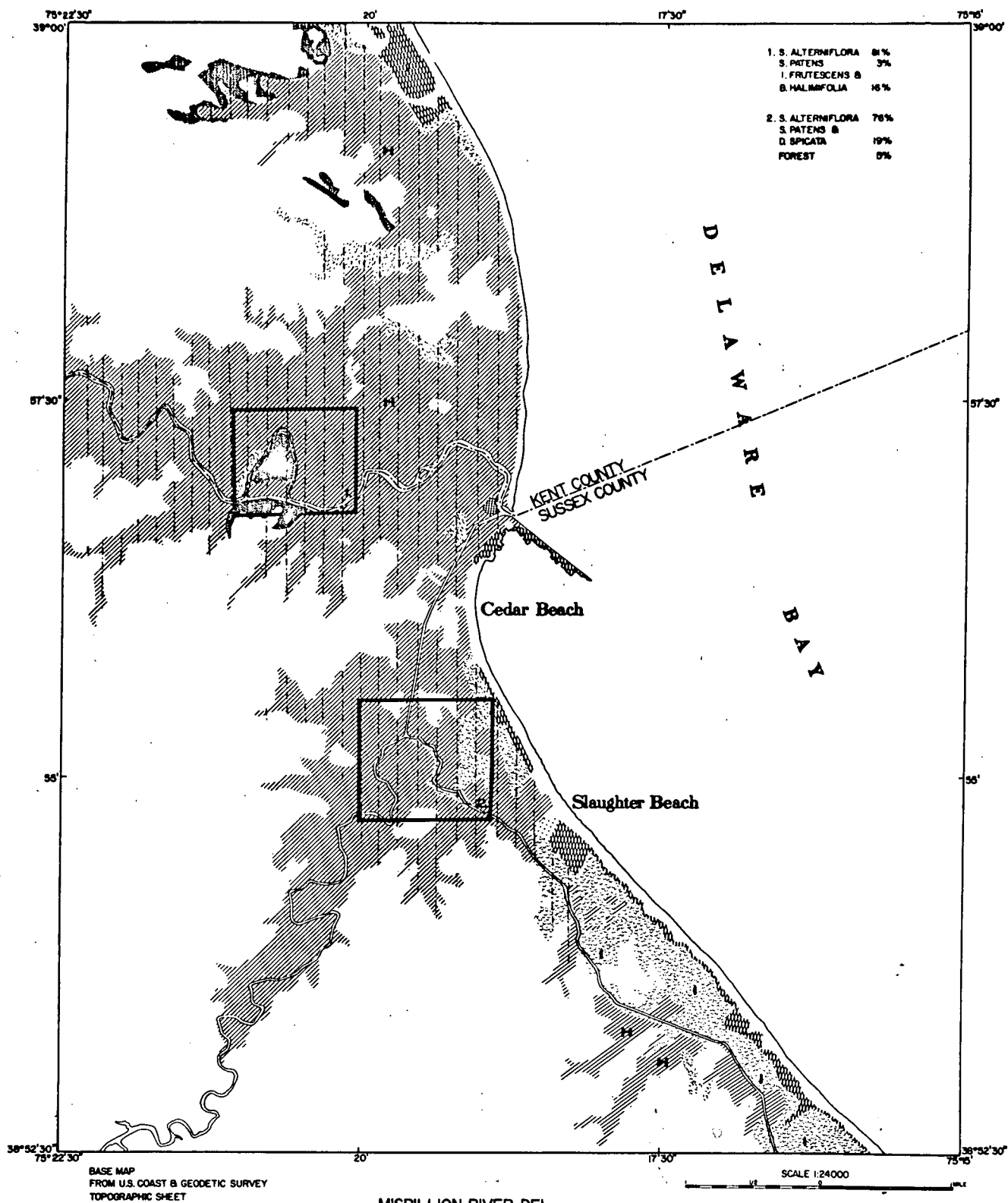
Identification of Coastal Vegetation
Species in ERTS-1 Imagery

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Summary of Significant Results
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Major communities of 1) Spartina alterniflora, 2) Spartina patens and Distichlis spicata, and 3) Iva frutescens and Baccharis halimifolia can be distinguished from each other and from surrounding uplands in ERTS-1 scanner bands #6 and #7. Similarly, major impounded areas, built to attract water fowl, can be identified. Mosquito control drainage ditches and plant species such as Phragmites communis which naturally occur in small, dispersed patches are impossible to discriminate within the resolution capability of the ERTS-1 scanner. In disturbed marshes of northern Delaware Bay, Phragmites communis, does occupy large enough expanses of marsh to be detected. In summary, it appears from preliminary analysis that spectral discrimination capabilities of ERTS-1 imagery compare favorably with those of lower altitude aerial infrared photography and that spatial resolution is the dominant factor limiting the potential for detailed vegetation mapping using ERTS-1 imagery.



KEY			
	SPARTINA ALTERNIFLORA (Salt Marsh Cord Grass)		SPARTINA PATENS and DISTICHLIS SPICATA (Salt Hay)
	PHRAGMITES COMMUNIS (Reed Grass)		IVA FRUTESCENS and BACCHARIS HALIMIFOLIA (High Marsh Shrubs)
	IMPOUNDED FRESH WATER		MARSH to be developed and/or DREDGE SPOIL, show best topographic map revision
	MOSQUITO CONTROL DITCHING		